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Search for Magnetic Monopoles with the Full ANTARES Neutrino Telescope Dataset

This study presents an updated search for magnetic monopoles using data collected over a 14-year period (2008–2022) by the ANTARES neutrino telescope. The interaction of magnetic monopoles with matter was modeled using the Kasama, Yang, and Goldhaber cross-section. Upper limits on the flux of magnetic monopoles were derived for velocities both above and below the Cherenkov threshold. No events consistent with the passage of magnetic monopoles through the detector were observed, allowing us to set an upper flux limit of approximately $5.6 \times 10^{-19} \text{ cm}^{-2} \text{ s}^{-1} \text{ sr}^{-1}$ for ultra-relativistic monopoles and approximately $3.4 \times 10^{-18} \text{ cm}^{-2} \text{ s}^{-1} \text{ sr}^{-1}$ for slow monopoles.

Collaboration(s)

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